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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------------|------------------------|
| 10/605,615 | 10/14/2003 | UMAR M. AHMAD | FIS920020185US2 | 2614 |
| 32074 7590 06/13/2007 INTERNATIONAL BUSINESS MACHINES CORPORATION DEPT. 18G BLDG. 300-482 2070 ROUTE 52 HOPEWELL JUNCTION, NY 12533 | | | EXAMINER LEVKOVICH, NATALIA A | |
| | | | ART UNIT 1743 | PAPER NUMBER |
| | | | MAIL DATE 06/13/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/605,615

Applicant(s)

AHMAD ET AL.

Examiner

Natalia Levkovich

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/14/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments and remarks dated 03/27/2007 have been acknowledged by the Examiner.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Drawings

3. The drawings remain objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the 'plurality of horizontal apertures' connecting 'vertical apertures', the edge plate' with a 'structural component', the 'supporting plate' and the 'intermediate plate abutting green-sheets' must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

4. Claims 30-36 are rejected under 35 U.S.C. 112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 30, line 10, 'said apertures', lack antecedent basis. It is also unclear, as was previously noted, what is meant by 'transferring apertures' from one plate to another.

Referring to claims 34-36, as was noted previously, it is unclear whether or not the 'structural component' disposed within the 'edge frame' is the same as the 'intermediate plate' comprising the 'edge frame', and, if not, the structural inter-relationships between the two are not clearly set forth in the claim. For the purpose of examination, Examiner assumes that the 'intermediate plate' and the 'structural component' are the same. It is also not clear how the 'intermediate plate' can abut the first or the third green-sheets without disconnecting the apertures of the first green-sheet from the apertures of the third green-sheet. Additionally, the structural inter-relationships between the 'intermediate plate' and the 'supporting plate' remain unclear.

Claim Rejections - 35 USC § 102

5. Claim 30 and 33 are rejected under 35 U.S.C. 102(b) as anticipated by Nanataki et al. (US 5728244).

Nanataki et al. disclose, as was discussed earlier, a multi-layer ceramic member comprising, as shown in Figure 3B, layer 7 ['first green-sheet' – Ex.] with a plurality of vertical apertures, the first underlying layer 9 ['second green-sheet' – Ex.] with a plurality of horizontal apertures, the second underlying layer 9 ['third green-sheet' – Ex.] with a plurality of vertical apertures, and the third underlying layer 9 ['supporting plate abutting the third green-sheet and having 'patterned' apertures' – Ex.]. The horizontal apertures

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of the second green-sheet connect the vertical ones of the first and the third green-sheets.

Claim Rejections - 35 USC § 103

6. Claims 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briscoe et al. (US 6527890).

Briscoe et al. disclose a micro-gas chromatograph column formed in a multilayered ceramic / green-sheet assembly which, as illustrated in Figure 2, comprises a plurality of green-sheet layers, each having a vertical or a horizontal aperture, in alternating order. For example, layers 42 and 46 include vertical apertures connected by a horizontal aperture of layer 44. The system also includes 'abutting layers' 48 and 40 ['supporting', or 'intermediate' plates – Ex.].

Although Briscoe discloses one chromatographic micro-column (and, therefore, only one aperture in each layer), it would have been clearly within the ordinary skill of an artisan at the time the invention was made to have arranged several micro-columns within the same multilayer assembly, in the modified apparatus of Briscoe, in order to improve productivity of the separation / chromatographic device.

Referring to claims 34-36, Briscoe does not teach the frame. However, this element is commonly used in multi-plate assemblies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a frame enclosing at least one of the sheets in the modified apparatus of Briscoe, for the ease of handling the assembly.

Response to Arguments

7. Applicant's arguments filed on 03/27/2007 have been fully considered but they are not persuasive, or moot in view of new grounds of rejection.

Applicant argue that neither Nanataki nor Briscoe disclose or suggest a structure in which the horizontal apertures of the second greensheet connect the plurality of vertical apertures in the first greensheet with the plurality of vertical apertures in the third greensheet. Examiner disagrees. Both Nanataki et al. (for example, in Figure 3B) and Briscoe et al. (for example, in Figure 2) disclose structures which read on the instant invention, as claimed. See the discussion above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462. The examiner can normally be reached on Mon-Fri, 8 a.m.-4p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill Warden
Supervisory Patent Examiner
Technology Center 1700